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(to be used for all correspondence after initial filing)

Application Number	10/044,743	
Filing Date	January 11, 2002	
First Named Inventor	John W. Ladd	
Art Unit	3729	
Examiner Name	R. Chang	
Total Number of Pages in This Submission	Attorney Docket Number	2269-4584.2US (00-0787.02/US)

### ENCLOSURES (check all that apply)

<input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment / Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Reply to Missing Parts/ Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____ <input type="checkbox"/> Landscape Table on CD	<input type="checkbox"/> After Allowance Communication to TC <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input checked="" type="checkbox"/> Appeal Brief (13 pages); Claims Appendix (4 pages); Check no. 9995 in the amount of \$500.00 <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input type="checkbox"/> Other Enclosure(s) (please identify below):
<b>Remarks</b> The Commissioner is authorized to charge any additional fees required but not submitted with any document or request requiring fee payment under 37 C.F.R. §§ 1.16 and 1.17 to Deposit Account 20-1469 during pendency of this application.		

### SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm	TraskBritt, P.C.		
Signature			
Printed Name	Brick G. Power		
Date	August 14, 2006	Reg. No.	38,581

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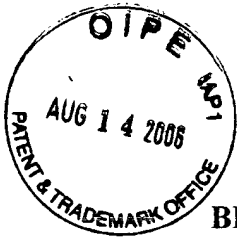
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**PATENT**

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES**

**In re Application of:**

John W. Ladd

**Serial No.:** 10/044,743

**Filed:** January 11, 2002

**For:** METHODS FOR MAGNETICALLY  
ESTABLISHING AN ELECTRICAL  
CONNECTION WITH A CONTACT OF A  
SEMICONDUCTOR DEVICE  
COMPONENT (as amended)

**Confirmation No.:** 3846

**Examiner:** R. Chang

**Group Art Unit:** 3729

**Attorney Docket No.:** 2269-4584.2US

**NOTICE OF EXPRESS MAILING**

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**APPEAL BRIEF**

Mail Stop Appeal Brief – Patents  
Commissioner for Patents  
P.O. Box 1450  
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Attn: Board of Patent Appeals and Interferences

Sir:

This APPEAL BRIEF is being submitted in the format required by 37 C.F.R.

§ 41.37(c)(1), with the fee required by 37 C.F.R. § 41.20(b)(2).

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(1) REAL PARTY IN INTEREST

U.S. Application Serial No. 10/103,671 (hereinafter “the ‘671 Application”), the application at issue in the above-referenced appeal, has been assigned to Micron Technology, Inc., as evidenced by the assignment that has been recorded with the U.S. Patent & Trademark Office (hereinafter “the Office”) at Reel No. 011543, Frame No. 0511. Accordingly, Micron Technology, Inc., is the real party in interest in the above-referenced appeal.

(2) RELATED APPEALS AND INTERFERENCES

There are currently no other related appeals, interferences, or other actions of which appellants or their representatives are aware that may have a bearing on the outcome of the decision of the Board of Patent Appeals and Interferences (hereinafter “the Board”) in the above-referenced appeal.

(3) STATUS OF CLAIMS

There are currently twenty (20) claims pending in the ‘671 Application. Of these, claims 1-9 and 11-20 have been considered, while claim 10 has been withdrawn from consideration.

Final rejections have been presented against claims 1-9 and 11-20. The final rejections of claims 1-9 and 11-20 are being appealed.

No claim has been allowed.

**(4) STATUS OF AMENDMENTS**

The '671 Application was filed on January 11, 2002, with twenty (20) claims.

An election of species requirement was made on April 23, 2003. A response followed on May 2, 2003, resulting in the withdrawal of claim 10 from consideration.

On July 25, 2003, a first action on the merits of claims 1-9 and 11-20 was mailed. Each of claims 1-9 and 11-20 was rejected. An Amendment and accompanying explanations as to the patentability of the pending claims were sent on October 27, 2003.

The previously presented grounds of rejection were maintained in a final Office Action, which was dated January 14, 2004. These rejections were again evaluated in an Amendment under 37 C.F.R. § 1.116, which was mailed on March 15, 2004.

An Advisory Action issued on April 7, 2004, indicated that the Examiner was not convinced by the reasoning that had been presented in the two previously submitted responses. Accordingly, a Notice of Appeal was filed on April 13, 2004, and was followed on July 13, 2004, by an Appeal Brief.

On October 5, 2004, the '671 Application was withdrawn from appeal, new grounds of rejection were presented. Those actions were followed by another Response, in which further reasoning as to the patentability of claims 1-9 and 11-20 was presented.

Still unconvinced by the explanations that had been provided, the Examiner maintained his prior grounds of rejection in a final rejection of the claims, which was sent on April 7, 2005. An Amendment under 37 C.F.R. § 1.116 followed on July 7, 2005.

On July 21, 2005, another Advisory Action was issued, in which the Examiner refused to enter the revisions to the claims.

A Request for Continued Examination (RCE) was filed on August 2, 2005, to facilitate entry of the previously proposed claim amendments. No claim amendments have since been presented.

Another action on the merits of claims 1-9 and 11-20 followed on September 23, 2005, in which the Examiner finally presented new grounds of rejection. Those grounds were responded to in a response that was submitted on December 23, 2005.

The Examiner maintained his rejections in a final action dated March 14, 2006. One last attempt was made on May 15, 2006, to convince the Examiner that claims 1-9 and 11-20 are patentable over the art of record but, as evidenced by the Advisory Action of June 6, 2006, that attempt was unsuccessful. Accordingly, a Notice of Appeal was filed on June 14, 2006.

The Notice of Appeal is followed by this APPEAL BRIEF, which is being submitted by August 14, 2006 – within two months of the date on which the Notice of Appeal was filed.

(5) SUMMARY OF THE CLAIMED SUBJECT MATTER

The above-referenced application includes claims that are directed to methods for establishing electrical contact with at least one semiconductor device. In an example of such a method, an electrical contact between a first member of an electrical connector and a contact that is in electrical communication with at least one semiconductor device is established and the first member is drawn toward the contact to at least temporarily maintain the electrical contact.

Independent claim 1; *see also*, paragraph [0013].

In addition, the above-referenced application includes claims that recite methods for stress testing semiconductor devices that are carried upon common substrates with common ground and power contacts. Such a method includes establishing electrical contact between a first member of an electrical connector and at least one contact of the ground contact and the power contact and drawing the first member toward the at least one contact to at least temporarily maintain the electrical contact. Independent claim 8; *see also*, paragraphs [0013] and [0014]. The act of drawing may be effected with another, second member of the electrical connector (claim 11; *see also*, paragraph [0013] and [0014]) where, for example, at least one of the first and second members is drawn toward the other (claim 12; *see also*, paragraphs [0013] and [0014]), such as by magnetic attraction (claim 13, *see also*, paragraph [0013]).

(6) GROUND OF REJECTION TO BE REVIEWED ON APPEAL

(A) The rejection of claims 1-9 and 14-17 under 35 U.S.C. § 103(a) for being drawn to subject matter that is assertedly unpatentable over the subject matter taught in U.S. Patent 3,855,693 to Umbaugh (hereinafter “Umbaugh”);

(B) The 35 U.S.C. § 103(a) rejection of claims 11-13 for being directed to subject matter that is allegedly not patentable over the subject matter taught in Umbaugh, in view of teachings from Butherus; and

(C) The rejection of claims 18-20 under 35 U.S.C. § 103(a) for reciting subject matter which is assertedly unpatentable over teachings from Umbaugh, in view of teachings of which the Office purports it can take “official notice.”

(7) ARGUMENT

(A) REJECTIONS UNDER 35 U.S.C. § 103(a)

Claims 1-9 and 11-20 stand rejected under 35 U.S.C. § 103(a).

(1) UMBAUGH

Claims 1-9 and 14-17 have been finally rejected under 35 U.S.C. § 103(a) for being drawn to subject matter that is assertedly unpatentable over the subject matter taught in Umbaugh.

(a) LEGAL AUTHORITY

The standard for establishing, maintaining, and upholding a rejection under 35 U.S.C. § 103(a) is set forth in M.P.E.P. § 706.02(j), which provides:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

(b) ART RELIED UPON

*Umbaugh*

Umbaugh teaches an assembly process by which cantilevered leads 20 that comprise ferromagnetic material are magnetically drawn toward corresponding terminals 14 of a substrate

while the leads are bonded or otherwise permanently secured to their corresponding terminals. Col. 2, lines 58-68. FIGs. 2 and 3 of Umbaugh illustrate the process of securing cantilevered magnetic leads 20 to their corresponding terminals 14. Umbaugh teaches that, in this process, “[t]he end 30 of [a] cantilevered lead 20 may be coated with flux 37 to promote an outer-lead bond by solder [36] reflow.” Col. 4, lines 63-66. The cantilevered magnetic leads 20 are magnetically drawn to their corresponding terminals 14. *See* col. 7, lines 40-54; col. 4, line 44, to col. 5, line 6. When the leads 20 are sufficiently close to their corresponding terminals 14, the leads 20 may be permanently secured and electrically connected to their corresponding terminals 14 with solder. *See, id.*

(c) ANALYSIS

It is respectfully submitted that there are several reasons why Umbaugh does not support a *prima facie* case of obviousness against any of claims 1-9 and 14-17.

First, it is respectfully submitted that Umbaugh does not teach or suggest each and every element of any of claims 1-9 or 14-17. Specifically, Umbaugh lacks any teaching or suggestion that the magnetism of the leads 20 is useful for anything other than bringing the leads 20 in proximity to their corresponding terminals 14 so that solder 36 may be positioned between the leads 20 and terminals 14 to establish permanent electrical connections therebetween.

While it has been asserted that “Umbaugh discloses in FIG. 4 a plurality of chips making connections and they are all inherently and obviously require power and ground, as well as a constant amount of current” (Final Office Action, page 2), it is respectfully submitted that FIG. 4 does not show electrical connection between leads 20 and terminals 14. Rather, FIG. 4 quite



clearly shows leads 20 that have not yet been drawn toward or soldered to terminals 14. This observation is supported by Umbaugh's statement that the leads 20, "are separated from the surface 27" of a carrier substrate 12. Col. 5, line 12. Thus, the leads 20 are also separated from their corresponding terminals 14. Without contacting one another, or without a conductive element therebetween, as is the case in FIG. 4, it is not understood how leads 20 could electrically communicate with their corresponding terminals 14.

The description of FIG. 4 relates merely to the manner in which a semiconductor chip 12 and carrier substrate 12 are assembled with one another, as well as to the materials from which various features are formed. *See, e.g.*, col. 5, lines 7-45.

Again, it is submitted that Umbaugh is completely devoid of any teaching or suggestion that the magnetism of leads 20 could be used to establish and at least temporarily maintain an electrical contact between leads 20 and terminals 14, as would be required for Umbaugh to teach or suggest each and every element of independent claim 1 and independent claim 8.

Second, it is respectfully submitted that, without the benefit of hindsight that the above-referenced application has provided to the Examiner, one of ordinary skill in the art wouldn't have been motivated to modify teachings from Umbaugh in the manner that has been asserted. Specifically, because Umbaugh teaches that the use of solder 36 is necessary to establish and maintain electrical connections between leads 20 and terminals 14, it is respectfully submitted that one of ordinary skill in the art wouldn't have been motivated to modify the teachings of Umbaugh in such a way as to rely completely upon magnetic attraction between leads 20 and terminals 14 to establish and maintain electrical contacts therebetween.

Third, it is respectfully submitted that one of ordinary skill in the art wouldn't have had any reason to expect that the asserted modification of the teachings from Umbaugh would be successful. This is because the teachings of Umbaugh relate entirely to processes for permanently assembling semiconductor device components to one another, not to methods for establishing temporary communication between an electrical connector and a contact in communication with at least one semiconductor device, as recited in independent claims 1 and 8.

Each of claims 2-7 is allowable, among other reasons, for depending directly or indirectly from claim 1, which is allowable.

Claims 9 and 14-17 are each allowable, among other reasons, for depending directly or indirectly from claim 8, which is allowable.

It is respectfully submitted that a *prima facie* case of obviousness has not been established against any of claims 1-9 or 14-17. Therefore, under 35 U.S.C. § 103(a), the subject matter recited in claims 1-9 and 14-17 is allowable over the subject matter taught in Umbaugh.

(2) UMBAUGH IN VIEW OF BUTHERUS

Claims 11-13 have been rejected under 35 U.S.C. § 103(a) for being drawn to subject matter that is allegedly not patentable over the subject matter taught in Umbaugh, in view of teachings from Butherus.

(a) ADDITIONAL ART RELIED UPON

*Butherus*

The teachings of Butherus relate to the use of magnetism during assembly to align leads with corresponding terminals on the carrier substrate. Col. 1, lines 6-31. The leads are then permanently bonded (*e.g.*, with solder) to the terminals to establish and maintain electrical contact therebetween. Col. 2, lines 71-75.

(b) ANALYSIS

It is respectfully submitted that teachings from Umbaugh and Butherus do not support a *prima facie* case of obviousness against any of claims 11-13 for at least two reasons.

First, it is respectfully submitted that neither Umbaugh nor Butherus teaches or suggests each and every element of any of claims 11-13. Like Umbaugh, Butherus lacks any teaching or suggestion that first and second members of an electrical connector may be used (*e.g.*, magnetically or otherwise drawn toward one another) to establish or at least temporarily maintain electrical contact between leads and contacts. Further, Umbaugh and Butherus both lack any teaching or suggestion that such electrical contact may be established or maintained during a stress testing process.

Second, Butherus does not remedy the aforementioned deficiencies of Umbaugh, including provision of the missing motivation to modify teachings from Umbaugh in such a way as to come up with the invention recited in independent claim 8, from which claims 11-13 depend, or provide one of ordinary skill in the art with any reason to expect that the teachings of

Umbaugh and Butherus could be combined in such a way as to render obvious each and every element of any of claims 11-13.

Additionally, each of claims 11-13 is allowable, among other reasons, for depending directly or indirectly from claim 8, which is allowable.

As such, teachings from Umbaugh and Butherus do not support a *prima facie* case of obviousness against any of claims 11-13.

(3) UMBAUGH IN VIEW OF OFFICIAL NOTICE

Claims 18-20 are rejected under 35 U.S.C. § 103(a) for reciting subject matter which is assertedly unpatentable over teachings from Umbaugh, in view of teachings of which the Office purports it can take “official notice.”

Claims 18-20 are allowable, among other reasons, for depending from claim 8 which is allowable.

Reversal of the 35 U.S.C. § 103(a) rejections of claims 1-9 and 11-20 is respectfully requested, as is the allowance of each of these claims.

(B) ELECTION OF SPECIES REQUIREMENT

In the Office Action of July 25, 2003, it was noted that “[if] independent claim 8 is allowed, [withdrawn] claim 10 will be rejoined.” In view of the allowability of independent claim 8, it is respectfully requested that claim 10 be considered and allowed. *See also* M.P.E.P. § 806.04(d).

(8) CLAIMS APPENDIX

The current status of each claim that has been introduced into the '256 Application is set forth in CLAIMS APPENDIX to this Appeal Brief.

(9) EVIDENCE APPENDIX

No evidence has been submitted pursuant to 37 C.F.R. §§ 1.130, 1.131, or 1.132. Accordingly, no evidence appendix accompanies this Appeal Brief.

(10) RELATED PROCEEDINGS APPENDIX

No decisions have been rendered by the Board or any court in a related application. Therefore, this Appeal Brief is not accompanied by a related proceedings appendix.

(11) CONCLUSION

It is respectfully submitted that:

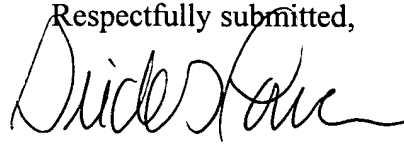
(A) Under 35 U.S.C. § 103(a), the subject matter to which claims 1-9 and 14-17 is drawn is allowable over the subject matter taught in Umbaugh;

(B) Claims 11-13 are allowable under 35 U.S.C. § 103(a) for being drawn to subject matter that is allowable over teachings from Umbaugh, in view of the teachings of Butherus; and

(C) Each of claims 18-20 recites subject matter that, under 35 U.S.C. § 103(a), is allowable over the subject matter taught in Umbaugh, in view of teachings of which the Office purports it can take "official notice."

Accordingly, reversal of the final rejections of claims 1-9 and 11-20 is respectfully solicited, as are the consideration of claim 10 and the allowance of each of claims 1-20.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Brick G. Power", written over the typed name.

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Date: August 14, 2006  
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Document in ProLaw

CLAIMS APPENDIX

1. A method for establishing an electrical contact with at least one semiconductor device, comprising:  
establishing an electrical contact between a first member of an electrical connector and a contact that is in electrical communication with the at least one semiconductor device; and  
drawing the first member toward the contact to at least temporarily maintain the electrical contact.
2. The method of claim 1, wherein the drawing is effected in a direction substantially normal to a plane of the contact.
3. The method of claim 1, wherein the drawing is effected in a direction substantially normal to a plane of a substrate upon which the contact is carried.
4. The method of claim 1, wherein the drawing is effected by positioning a second member of the electrical connector opposite the first member.
5. The method of claim 4, wherein the drawing is effected by magnetically attracting at least one of the first member and the second member toward at least the other of the first member and the second member.

6. The method of claim 4, wherein the drawing comprises securing the first and second members to a substrate upon which the contact is carried.
7. The method of claim 1, wherein the drawing comprises magnetically attracting the first member against the contact.
8. A method for stress testing a plurality of semiconductor devices carried upon a common substrate and in communication with common ground and power contacts, comprising:  
establishing electrical contact between a first member of an electrical connector and at least one contact of the ground contact and the power contact; and  
drawing the first member toward the at least one contact to at least temporarily maintain the electrical contact.
9. The method of claim 8, wherein the drawing is effected in a direction substantially normal to a plane of the substrate.
10. The method of claim 8, wherein drawing nonrigidly biases the first member against the at least one contact.
11. The method of claim 8, wherein the drawing comprises positioning a second member of the electrical connector opposite the substrate from the first member.



12. The method of claim 11, wherein at least one of the first member and the second member is drawn toward at least the other of the first member and the second member.

13. The method of claim 12, wherein the drawing comprises magnetically attracting at least one of the first member and the second member toward at least the other of the first member and the second member.

14. The method of claim 8, wherein the drawing comprises magnetically attracting the first member against the at least one contact.

15. The method of claim 8, wherein the drawing comprises securing at least the first member in position relative to the substrate.

16. The method of claim 8, further comprising:  
electrically connecting another first member of another electrical connector to another of the  
ground contact and the power contact; and  
drawing the another first member toward the another contact.

17. The method of claim 16, further comprising:  
applying a substantially constant amount of current to each semiconductor device of the plurality  
of semiconductor devices through the first member and the another first member.

18. The method of claim 17, further comprising:  
heating each of the plurality of semiconductor devices.
19. The method of claim 18, wherein the heating comprises cycling a temperature of  
each of the plurality of semiconductor devices.
20. The method of claim 18, wherein the heating comprises varying a temperature of  
each of the plurality of semiconductor devices.